



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,557	01/03/2001	Earl Frederick Barrick	084377/0103	9807

28598 7590 12/01/2005

GEORGE MASON UNIVERSITY
OFFICE OF TECHNOLOGY TRANSFER, MSN 5G5
4400 UNIVERSITY DRIVE
FAIRFAX, VA 22030

EXAMINER

RAMIREZ, JOHN FERNANDO

ART UNIT PAPER NUMBER

3737

DATE MAILED: 12/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/752,557	Applicant(s) BARRICK ET AL.	
	Examiner John F. Ramirez	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/05/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 26, 27 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 26, 27 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3737

DETAILED ACTION

Election/Restrictions

In response to the Election/Restriction made on July 05/2005, applicant cancelled claims 19-25 and 28-30, thus claims 1-18, 26, 27 and 31, are now pending.

In regards to Election of Species applicant's arguments are persuasive, thus the election of species requirement has been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

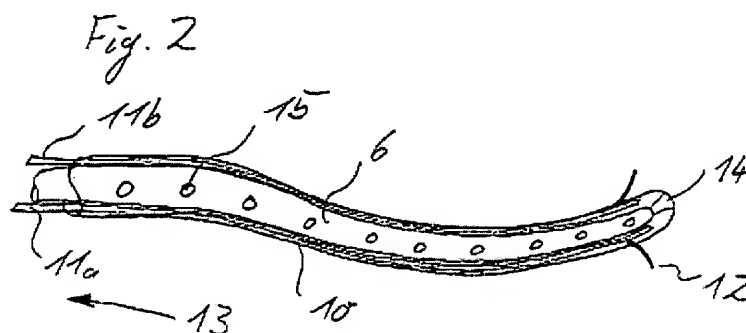
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before

Art Unit: 3737

November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-17, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Vilsmeier et al. (US 6,611,700).



Vilsmeier et al. discloses a device for performing surgery or therapeutic interventions on a patient, comprising: a first curvature sensor configured to be placed on a patient (col. 1, line 66 – col. 2, line 33), the first curvature sensor providing an output (col. 2, lines 7-23); an attachment fixture coupled to the first curvature sensor (col. 2, lines 33-52); and a computer receiving the output of the curvature sensor (col. 3, lines 54-59), wherein the first curvature sensor further comprises a plurality of fiducials capable of being detected by a medical imaging system (col. 2, lines 23-33), a second curvature sensor providing an output to the computer, the second curvature sensor having a first end and a second end and capable of being coupled to the attachment fixture at the first end; and a tool connector coupled to the second end of the second curvature sensor (col. 3, line

Art Unit: 3737

60 – col. 4, line 40), a second attachment fixture capable of being positioned at a known location with respect to the first curvature sensor, wherein the second end of the second curvature sensor is coupled to the second attachment fixture and the tool connector is coupled to the second curvature sensor between the first end and the second end (col. 4, lines 37-39), a monitor for positionally displaying the tool connector with respect to the patient (col. 2, lines 34-61; col. 3, lines 54-59), an electronic interface device coupled to the first curvature sensor and electronically coupled to the computer (col. 2, lines 34-61; col. 3, lines 54-59) , an optical tracking system electronically coupled to the computer and configured to positionally track the tool connector or a tool positioned in the tool connector (claim 15), wherein the computer uses both the second curvature sensor and the optical tracking system to positionally track the tool connector or a tool positioned in the tool connector (col. 2, lines 34-61; col. 3, lines 54-59), wherein the computer is configured to determine an attachment fixture-centered frame of reference based on the output of the curvature sensor (col. 1, lines 20-34; col. 1, line 66 – col. 2, line 5), wherein the first curvature sensor comprises a fiber optic curvature sensor(col. 4, lines 37-39), wherein the attachment fixture comprises: at least one fiducial; and a latching mechanism configured for attaching to the first end of the second curvature sensor (col. 2, lines 33-61), the curvature sensor being adapted to measure and provide an output of the curvature the portion of the patient (col. 3, line 60 - col. 4, line 5), a plurality of fiducials coupled to the curvature sensor (elements 15 and 6, Figure 2), a device for generating a patient-based frame of reference for an image guided therapy or image guided

Art Unit: 3737

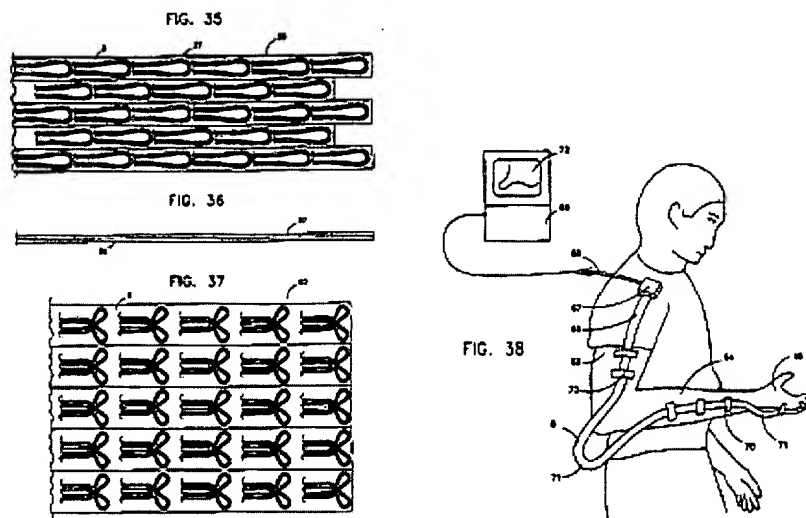
surgery system (col.1, lines 20-34) , further comprising a plurality of fiducials (claim 1), each fiducial of the plurality of fiducials being coupled to the curvature sensor at known inter-fiducial distances (Figure 2), and means for registering a volumetric image of the body to the means for measuring the curvature of a body (col. 2, lines 33-52), a tool capable of being coupled to the second end of the second curvature sensor (col. 2, lines 53-61), a computer receiving the outputs of the first curvature sensor and the second curvature sensor and adapted to provide an output of the curvature of the first curvature sensor and the position and orientation of the tool coupled to the second end of the second curvature sensor with respect to the attachment fixture, and a communication device electronically coupled to the computer and adapted to communicate the output of the computer to a distant receiver (col. 2, line 62 – col. 3, line 53).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vilsmeier et al. in view of Danisch (US 6,127,672).



Vilsmeier et al. teaches all the limitations of the claimed subject matter except for mentioning specifically a device for generating a frame of reference comprising a ribbon, the ribbon being composed of one or a combination of plastic, metal wire, metal strip, fabric, rubber, synthetic rubber, nylon, thread, glass, or paper, a plurality of fiducials attached at known inter-fiducial distances along the ribbon; and an attachment fixture coupled to the ribbon at a known position with respect to the plurality of fiducials, a garment configured to be applied to a body, the garment comprising, at least one curvature sensor, and a plurality of filaments coupled to the plurality of curvature sensors to form a mesh, and a communication device configured to communicate the output of the curvature sensors to a distant receiver.

However, a device for generating a frame of reference comprising a ribbon, the ribbon being composed of one or a combination of plastic, metal wire, metal strip, fabric, rubber, synthetic rubber, nylon, thread, glass, or paper, a plurality of fiducials attached at known inter-fiducial distances along the ribbon;

Art Unit: 3737

and an attachment fixture coupled to the ribbon at a known position with respect to the plurality of fiducials, a garment configured to be applied to a body, the garment comprising, at least one curvature sensor, and a plurality of filaments coupled to the plurality of curvature sensors to form a mesh, and a communication device configured to communicate the output of the curvature sensors to a distant receiver are conventional in the art as evidenced by the teachings of Danisch (US 6,127,672).

The Danisch patent teaches a device for generating a frame of reference comprising a ribbon, the ribbon being composed of one or a combination of plastic, metal wire, metal strip, fabric, rubber, synthetic rubber, nylon, thread, glass, or paper, a plurality of fiducials attached at known inter-fiducial distances along the ribbon; and an attachment fixture coupled to the ribbon at a known position with respect to the plurality of fiducials.

Based on the above observations, for a person of ordinary skill in the art, modifying the method disclosed by Vilsmeier et al., with the above discussed enhancements would have been considered obvious because such modifications would have provided a position and motion sensing device that can conveniently track and identify the location and geometric configuration of objects.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John F. Ramirez whose telephone number is

Art Unit: 3737

(571) 272-8685. The examiner can normally be reached on (Mon-Fri) 7:30 - 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571) 272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JFR
11/28/05



ALI IMAM
PRIMARY EXAMINER